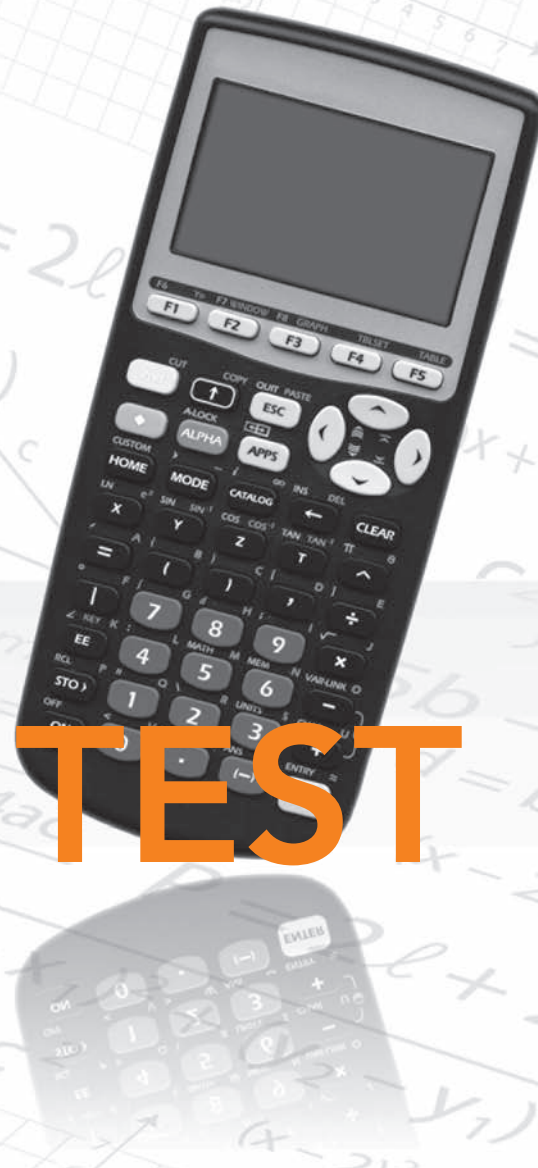Student Name _____

Teacher Name _____

School _____

System _____

ELSA
ALGEBRA I
PRACTICE TEST

ELSA Algebra I

Tennessee End of Course Assessment
English Linguistically Simplified Assessment
Algebra I

PEARSON

Mathematics Reference Page

Abbreviations for Geometric Formulas

A = area	d = diameter	r = radius
B = area of base	h = height	s = length of side
b = base	ℓ = length	V = volume
C = circumference	P = perimeter	w = width

Perimeter (P) and Circumference (C)

Any Polygon: P = sum of side lengths

Rectangle: $P = 2\ell + 2w$

Circle: $C = 2\pi r$ or πd

$$\pi \approx 3.14 \text{ or } \frac{22}{7}$$

Plane Figures — Area (A)
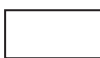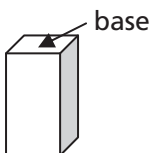
Triangle: $A = \dfrac{1}{2}bh$

Rectangle: $A = \ell w$

Circle: $A = \pi r^2$

$$\pi \approx 3.14 \text{ or } \frac{22}{7}$$

Solid Figures — Volume (V)

Right Rectangular Prism: $V = Bh$ or $V = \ell wh$

Cube: $V = s^3$

Algebraic Formulas and Equations

$d = rt$ — distance = rate × time

Distance Formula
$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$
d = distance between two points

Midpoint Formula:
$$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

Slope Formula:
$$m = \frac{y_2 - y_1}{x_2 - x_1}$$
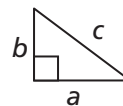
Standard Form of a Linear Equation: $Ax + By = C$

Slope-Intercept Equation: $y = mx + b$

Point-Slope Equation: $y - y_1 = m(x - x_1)$

Pythagorean Theorem: $a^2 + b^2 = c^2$

Quadratics

For $ax^2 + bx + c = 0$:
$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Discriminant: $b^2 - 4ac$

Measurement Conversions

LENGTH
1 foot (ft) = 12 inches (in.)
1 yard (yd) = 3 feet
1 yard = 36 inches
1 mile = 1,760 yards
1 mile = 5,280 feet

CAPACITY
1 cup (c) = 8 fluid ounces (fl oz)
1 pint (pt) = 2 cups
1 quart (qt) = 2 pints
1 quart = 4 cups
1 gallon (gal) = 4 quarts

WEIGHT
1 pound (lb) = 16 ounces (oz)
1 ton (T) = 2,000 pounds

CONVERSION BETWEEN CUSTOMARY AND METRIC MEASUREMENT
1 yard = 0.9144 m
1 foot = 0.3048 m
1 inch = 2.54 cm
1 quart = 0.946 L
1 ounce = 28.35 g
1 lb = 0.45 kg

Contents

Introduction to ELSA Algebra I

TCAP English Linguistically Simplified Assessment (ELSA)

The End of Course English Linguistically Simplified Assessment (ELSA) is the End of Course Assessment in "simplified" English. It is a multiple-choice test designed to measure student achievement in certain skills in two content areas: Algebra I and English II. The questions in this Practice Test are examples of items used in the actual test.

ELSA test questions

Questions are written to test student performance in state content standards. The State Content Standards and Performance Indicators were developed by the Tennessee Department of Education. These Standards and Performance Indicators are listed on the State Department of Education Web site at http://www.state.tn.us/education/curriculum.shtml.

Test accommodations

The End of Course English Linguistically Simplified Assessment may be administered using various procedures that are used during the student's daily educational program. Certain conditions must be met for students to be eligible for Special and English Language Learner (ELL) accommodations.

Content of End of Course tests

The testing program titled the Tennessee End of Course Assessment was established to meet the Tennessee mandate for end of course assessments in Tennessee secondary schools. These tests measure the Tennessee State Performance Indicators. Subject areas covered by the end of course assessments include Mathematics, Language Arts, History, and Science.

Test development

For the *Tennessee End of Course Assessment*, professional item writers experienced in each of the content areas researched and wrote the items. Professional editors and test developers carefully reviewed all items and test directions for content and accuracy. To provide a large pool of items for final test selection, the test developers created approximately 50% more items as were needed in the final editions of the tests.

After items were field tested, student responses were analyzed. Professional content editors and researchers carefully reviewed items, their data, and test directions for content, suitability, and accuracy before including certain items and test directions in operational tests.

Test administration

Tennessee End of Course Assessments are given to students as they are completing courses that are included in the program. Students who are Limited English Proficient (LEP) will be tested using the ELSA test form. Tests may be given midyear for block schedules or at the end of the school year.

This test contains 65 multiple-choice questions.

You will have ample time to read and answer each of the questions. The ELSA Algebra I test has been designed to be administered in one session and is not timed. The first 15 minutes are set aside to complete identifying data on the answer sheet.

A reference page, similar to the one located in this Practice Test, will be in the front of the actual test. This page includes a list of formulas, equations, and tables for use during testing.

Calculator use is optional. Sharing calculators during testing is not permitted.

The following types of calculators/devices may **NOT** be used during the test:

- pocket organizers

- electronic writing pads or input devices

- Some examples of prohibited calculators are:

  o Casio models: CFX-9970G, Algebra FX 2.0

  o Hewlett-Packard models: HP-40G, HP-49G

  o Texas Instruments models: TI-89, TI-92, Voyage 200, TI-NSPIRE - the CAS version (The non-CAS version of TI-NSPIRE is allowable.)

- calculators that can communicate (transfer data or information) wirelessly with other student calculators/devices

- cell phones, PSPs, and/or iPods

Students may use any four-function, scientific, or graphing calculator that does not have any of the above features. The use of units that have a Computer Algebra System (CAS) is NOT allowed.

Tips for Taking the Test

Preparing for the test

- Take this Practice Test several times.

- Review the Tennessee ELSA End of Course Item Sampler for Algebra I located at http://tennessee.gov/education/assessment/sec_samplers.shtml on the Tennessee Department of Education Web site.

- Become familiar with the correct way to mark answers on the answer sheet. There is a sample answer sheet in this Practice Test.

Before the test

- Get a good night's sleep. To do your best, you need to be rested.

During the test

- Relax. It is normal to be somewhat nervous before the test. Try to relax and not worry.

- Listen. Listen to and read the test directions carefully. Ask for an explanation of the directions if you do not understand them.

- Plan your time. Do not spend too much time on any one question. If a question seems to take too long, skip it and return to it later. First answer all questions that you are sure about.

- Think. If you are not sure how to answer a question, read it again and try your best to answer the question. Rule out answer choices that you know are incorrect and choose from those that remain.

Answer Sheet for the Practice Test

1 Ⓐ Ⓑ Ⓒ Ⓓ	14 Ⓕ Ⓖ Ⓗ Ⓙ	27 Ⓐ Ⓑ Ⓒ Ⓓ	40 Ⓕ Ⓖ Ⓗ Ⓙ	53 Ⓐ Ⓑ Ⓒ Ⓓ
2 Ⓕ Ⓖ Ⓗ Ⓙ	15 Ⓐ Ⓑ Ⓒ Ⓓ	28 Ⓕ Ⓖ Ⓗ Ⓙ	41 Ⓐ Ⓑ Ⓒ Ⓓ	54 Ⓕ Ⓖ Ⓗ Ⓙ
3 Ⓐ Ⓑ Ⓒ Ⓓ	16 Ⓕ Ⓖ Ⓗ Ⓙ	29 Ⓐ Ⓑ Ⓒ Ⓓ	42 Ⓕ Ⓖ Ⓗ Ⓙ	55 Ⓐ Ⓑ Ⓒ Ⓓ
4 Ⓕ Ⓖ Ⓗ Ⓙ	17 Ⓐ Ⓑ Ⓒ Ⓓ	30 Ⓕ Ⓖ Ⓗ Ⓙ	43 Ⓐ Ⓑ Ⓒ Ⓓ	56 Ⓕ Ⓖ Ⓗ Ⓙ
5 Ⓐ Ⓑ Ⓒ Ⓓ	18 Ⓕ Ⓖ Ⓗ Ⓙ	31 Ⓐ Ⓑ Ⓒ Ⓓ	44 Ⓕ Ⓖ Ⓗ Ⓙ	57 Ⓐ Ⓑ Ⓒ Ⓓ
6 Ⓕ Ⓖ Ⓗ Ⓙ	19 Ⓐ Ⓑ Ⓒ Ⓓ	32 Ⓕ Ⓖ Ⓗ Ⓙ	45 Ⓐ Ⓑ Ⓒ Ⓓ	58 Ⓕ Ⓖ Ⓗ Ⓙ
7 Ⓐ Ⓑ Ⓒ Ⓓ	20 Ⓕ Ⓖ Ⓗ Ⓙ	33 Ⓐ Ⓑ Ⓒ Ⓓ	46 Ⓕ Ⓖ Ⓗ Ⓙ	59 Ⓐ Ⓑ Ⓒ Ⓓ
8 Ⓕ Ⓖ Ⓗ Ⓙ	21 Ⓐ Ⓑ Ⓒ Ⓓ	34 Ⓕ Ⓖ Ⓗ Ⓙ	47 Ⓐ Ⓑ Ⓒ Ⓓ	60 Ⓕ Ⓖ Ⓗ Ⓙ
9 Ⓐ Ⓑ Ⓒ Ⓓ	22 Ⓕ Ⓖ Ⓗ Ⓙ	35 Ⓐ Ⓑ Ⓒ Ⓓ	48 Ⓕ Ⓖ Ⓗ Ⓙ	61 Ⓐ Ⓑ Ⓒ Ⓓ
10 Ⓕ Ⓖ Ⓗ Ⓙ	23 Ⓐ Ⓑ Ⓒ Ⓓ	36 Ⓕ Ⓖ Ⓗ Ⓙ	49 Ⓐ Ⓑ Ⓒ Ⓓ	62 Ⓕ Ⓖ Ⓗ Ⓙ
11 Ⓐ Ⓑ Ⓒ Ⓓ	24 Ⓕ Ⓖ Ⓗ Ⓙ	37 Ⓐ Ⓑ Ⓒ Ⓓ	50 Ⓕ Ⓖ Ⓗ Ⓙ	63 Ⓐ Ⓑ Ⓒ Ⓓ
12 Ⓕ Ⓖ Ⓗ Ⓙ	25 Ⓐ Ⓑ Ⓒ Ⓓ	38 Ⓕ Ⓖ Ⓗ Ⓙ	51 Ⓐ Ⓑ Ⓒ Ⓓ	64 Ⓕ Ⓖ Ⓗ Ⓙ
13 Ⓐ Ⓑ Ⓒ Ⓓ	26 Ⓕ Ⓖ Ⓗ Ⓙ	39 Ⓐ Ⓑ Ⓒ Ⓓ	52 Ⓕ Ⓖ Ⓗ Ⓙ	65 Ⓐ Ⓑ Ⓒ Ⓓ

Directions for Taking the Practice Test

In this Practice Test, you will perform various mathematical operations. You may use your calculator and Reference Page located in the front of this book to help you solve the problems. You may write in the open spaces in this book to work the problems, but remember to fill in the circle on your answer sheet that goes with the answer you choose for each question. Fill in the circle completely and make your mark heavy and dark. If you want to change an answer, erase the mark you made and make a new mark.

You will do the items in this Practice Test by yourself. Remember to read all the directions carefully. When you see the words *Go On* at the bottom of the page, go to the next page. When you come to the word STOP, you have finished this test. When you have finished, you may check your answers.

On your answer sheet, find Number 1. Mark your answers beginning with Number 1.

You may begin.

Stop when you have finished the test.

At the end of the Practice Test, make sure that all your marks are heavy and dark and that you have completely erased any marks that you do not want.

Turn to Page 40 and locate the Answer Key. Check your answers and review those items that you marked incorrectly.

1 Factor: $x^2 + 15x - 54$

    A $(x - 9)(x + 6)$
    B $(x + 9)(x - 6)$
    C $(x - 3)(x + 18)$
    D $(x + 3)(x - 18)$

2 A line segment has endpoints at $(-1, 3)$ and $(5, 7)$. What are the coordinates for the midpoint of this line segment?

    F $(2, 5)$
    G $(3, 2)$
    H $(5, 2)$
    J $(6, 4)$

3 What is the value of $\sqrt{\dfrac{25}{16}} - \sqrt{\dfrac{36}{25}}$?

    A $\dfrac{7}{400}$

    B $\dfrac{1}{20}$

    C $\dfrac{29}{400}$

    D $\dfrac{7}{20}$

4 What is the value of the expression when $x = 4$ and $y = -2$?

$$\frac{x^2}{2} + xy^3$$

    F -28
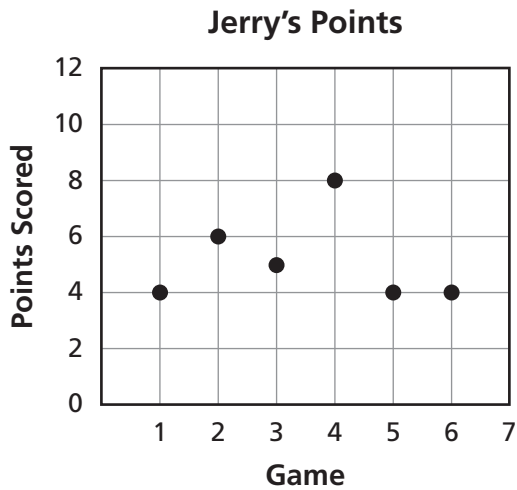   **G** -24
    H -20
    J -16

5 Which set of numbers is ordered from greatest to least?

    A $\left\{ \dfrac{13}{8}, \sqrt{3}, 1.75, \dfrac{9}{5} \right\}$

    B $\left\{ \sqrt{3}, \dfrac{9}{5}, 1.75, \dfrac{13}{8} \right\}$

    C $\left\{ \dfrac{9}{5}, 1.75, \dfrac{13}{8}, \sqrt{3} \right\}$

    D $\left\{ \dfrac{9}{5}, 1.75, \sqrt{3}, \dfrac{13}{8} \right\}$

6 An 8-ounce package of cheese costs $4.29. Which is closest to the cost per pound?

    F $0.54
    G $2.15
    H $6.29
    J $8.58

Go On ▶

7 The graph shows the number of points Jerry scored in each of six games.

Jerry's Points

Jerry will play in Game 7. The number of points he scores in this game will be an outlier if he scores

A 3 points.

B 4 points.

C 8 points.

D 12 points.

8 $(5m^3 + 2m^2 - m) + (m^2 + 4m - 2) =$

F $5m^3 + 3m^2 - 5m + 2$

G $5m^3 + 3m^2 + 3m - 2$

H $5m^3 + 2m^2 - 5m - 2$

J $5m^3 + 2m^2 + 3m + 2$

Go On ▶

9 Which expression has a value closest to $(9.06 \times 10^{-5})(6.022 \times 10^{23})$?

    A 1.51×10^{18}

    B 1.51×10^{19}

    C 5.46×10^{18}

    D 5.46×10^{19}

10 Simplify $\dfrac{x^2 - x - 6}{2x^2 + x - 6}$ for all values of x for which the expression is defined.

    F $x^2 + 2x$

    G $3x^2 - 12$

    H $\dfrac{x - 3}{2x - 3}$

    J $\dfrac{x - 3}{2x + 3}$

11 **Solve:** $20x - 18 < 50 < 36x - 16$

A $1\frac{5}{6} < x < 3\frac{2}{5}$

B $1\frac{5}{6} < x < \frac{17}{18}$

C $1\frac{3}{5} < x < 3\frac{2}{5}$

D $1\frac{3}{5} < x < \frac{17}{18}$

12 Nadine is a photographer. She earns $1,000 per month plus $10 for each photo session, p, she works during the month. Her total monthly earnings, M, can be calculated by using the following equation.

$$M = 1,000 + 10p$$

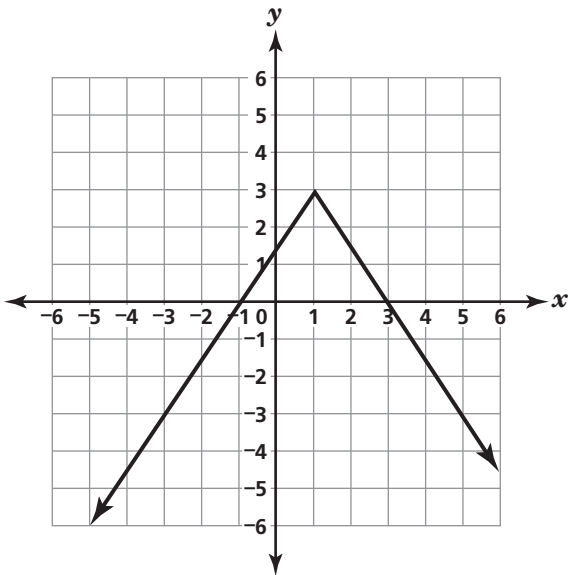Which new equation could be used to calculate M, if Nadine earns $2 more per photo session?

F $M = 1,002 + 10p$

G $M = 1,000 + 2p$

H $M = 1,002 + 12p$

J $M = 1,000 + 12p$

Go On ▶

13 This graph represents a relation.
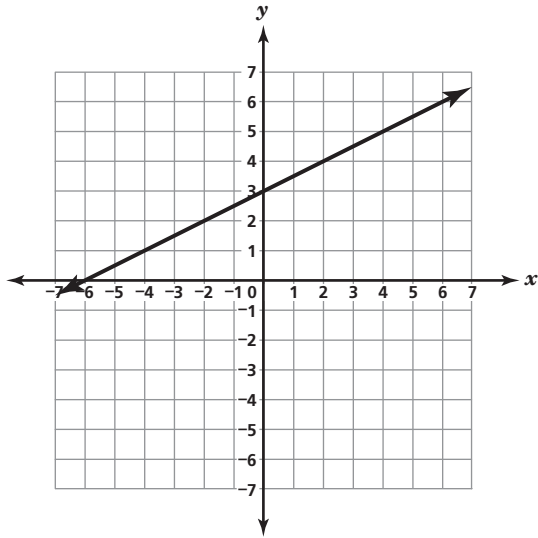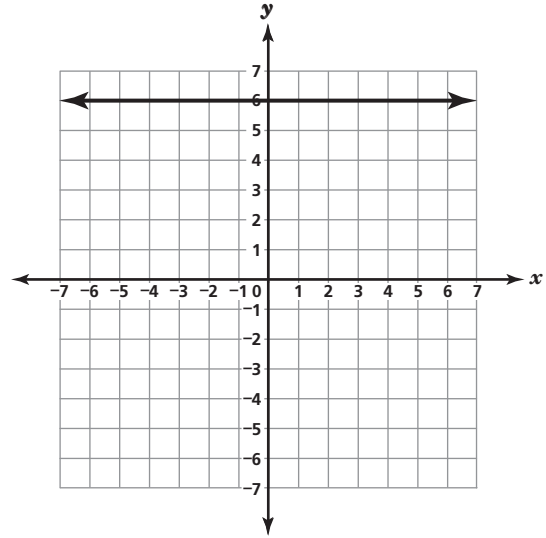

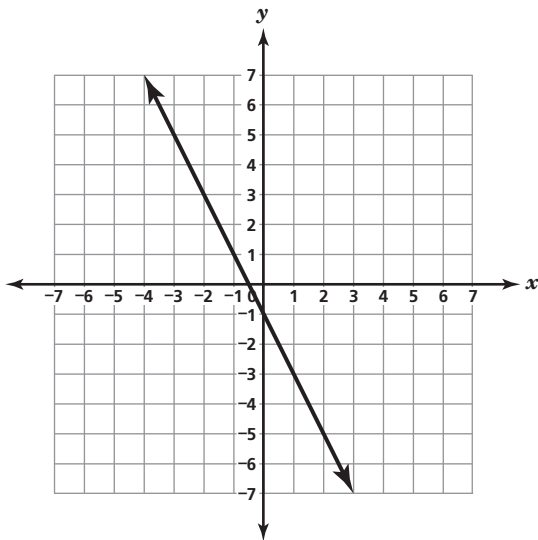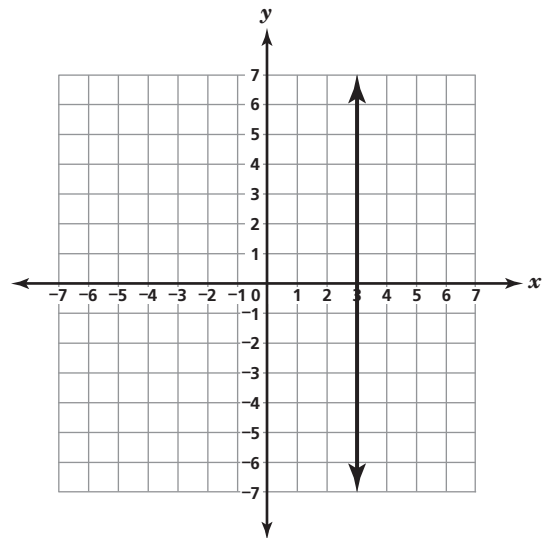Which set of ordered pairs is included in this relation?

A $\{(-3,-3),(0,3),(3,1)\}$

B $\{(0,-1),(2,2),(4,-1)\}$

C $\{(-5,-6),(3,0),(5,-3)\}$

D $\{(-4,-4),(-2,-2),(4,-3)\}$

14 Which function represents the data shown in this table?

n	f(n)
1	4
2	11
3	18
4	25
5	32

F $f(n) = 3n + 1$

G $f(n) = 5n + 3$

H $f(n) = 6n - 1$

J $f(n) = 7n - 3$

Go On ▶

15 Which graph represents a relation that is not a function?

A

C

B

D

Go On ▶

16 $(x - k)(y - k) =$

    F $xy - k^2$

    G $xy + k^2$

    H $xy - xk - ky + k^2$

    J $xy + xk + ky - k^2$

17   Simplify the expression below and state all restrictions on the domain.

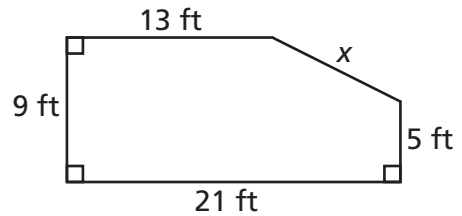$$\frac{x^2 - 11x + 28}{x^2 - 4x - 21}$$

    A $\dfrac{x + 4}{x - 3}$, $x \neq -7$ and $x \neq 3$

    B $\dfrac{x + 4}{x - 3}$, $x \neq -4$ and $x \neq 3$

    C $\dfrac{x - 4}{x + 3}$, $x \neq -3$ and $x \neq 7$

    D $\dfrac{x - 4}{x + 3}$, $x \neq -3$ and $x \neq 4$

18   The diagram below shows the dimensions for the floor of a room.

What is the dimension, in feet (ft), represented by x?

    F $4\sqrt{3}$

    G $4\sqrt{5}$

    H $4\sqrt{13}$

    J $4\sqrt{17}$

19 Katie rented a moving truck. The total rental cost included a one-time fee of $40.00 and $0.75 for each mile driven. Which equation represents t, the total cost in dollars of renting a truck that was driven n miles?

A $t = 40 + 0.75n$

B $t = 40 + \dfrac{0.75}{n}$

C $t = 0.75 + 40n$

D $t = 0.75 + \dfrac{40}{n}$

20 A data set has a mean of 33. Marcy multiplies each value in this data set by 5. What is the mean of Marcy's new data set?
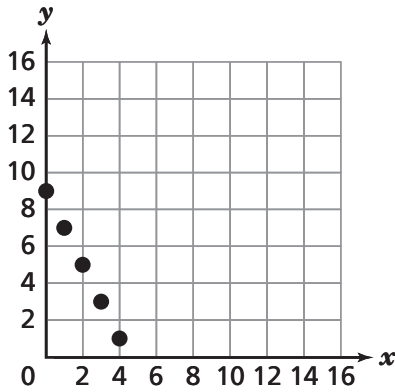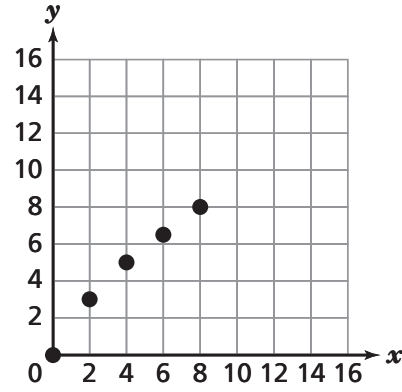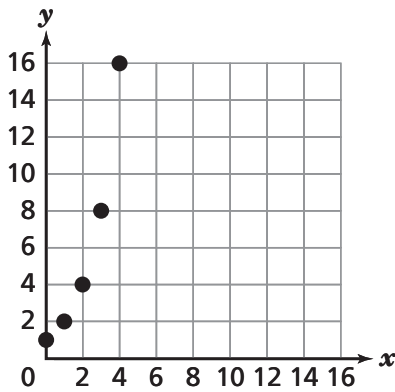
F   5

G   33

H   132

J   165

Go On ▶

21   Which scatterplot <u>best</u> represents a negative linear relationship between the variables *x* and *y*?
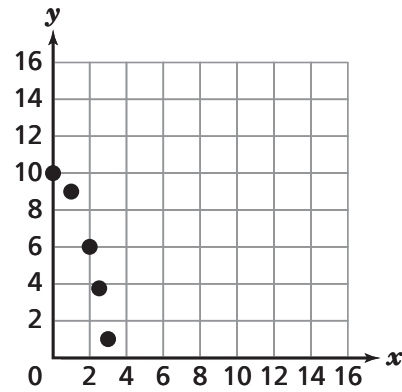

A

C

B

D

Go On ▶

22 A lawn can be mowed at an average rate of 44 square feet per minute. Which is closest to this rate in square yards per second?

F 0.01

G 0.08

H 0.24

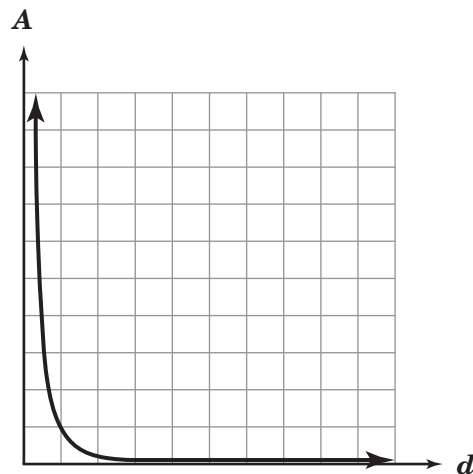**J** 0.31

23 Which expression is equivalent to $\left(\sqrt{2x^2}\right)^4$?

A $2x^4$
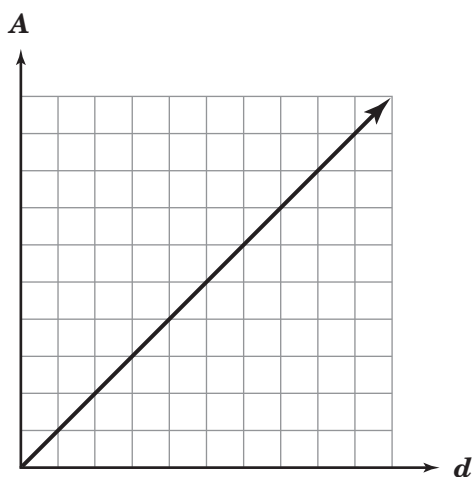
B $4x^4$

C $4x^8$

D $8x^8$

Go On ▶

24 The function $A = \dfrac{\pi d^2}{4}$ shows the relationship between the area, A, of a circle and its

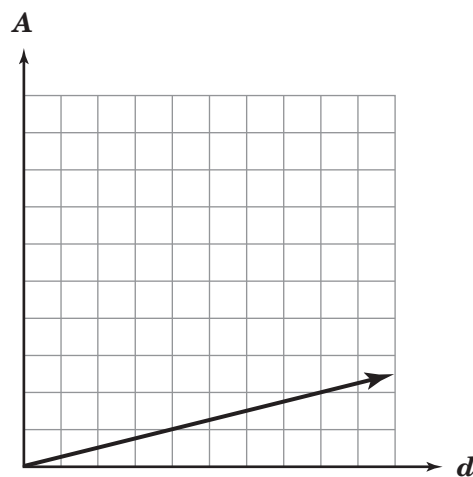diameter, d. Which graph best represents this relationship?

A

d

F

A

d

H

A

d

G

A

d

J

Go On ▶
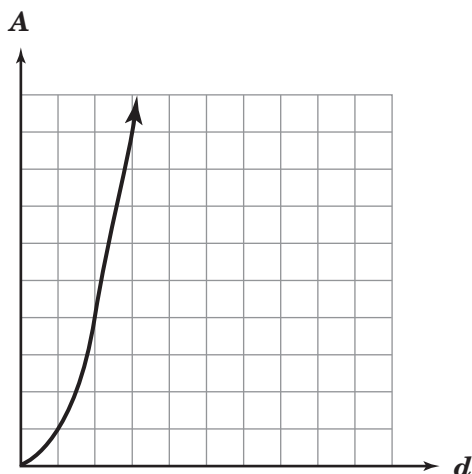
25 The chart below shows the number of colored marbles in a container. Each marble is the same size.

Colored Marbles

Color	Number of Marbles
Blue	2,578
Red	1,359
Yellow	1,240
Green	580

One marble will be randomly selected from the container. Which decimal is closest to the probability that the marble selected will be red or green?

A   0.10

B   0.24

C   0.34

D   0.66

26 Which function represents the linear pattern shown in the table?

x	$f(x)$
1	−2
2	1
3	4
4	7

F $f(x) = 3x - 5$

G $f(x) = 2x - 4$

H $f(x) = x + 3$

J $f(x) = x + 1$

27 Simplify: $2x^4 \left(3x^3 - x^2 + 5x\right)$

A $6x^7 - x^2 + 5x$

B $6x^{12} - x^2 + 5x$

C $6x^7 - 2x^6 + 10x^5$

D $6x^{12} - 2x^8 + 10x^4$

Go On ▶

28   Which equation <u>best</u> represents the graph of the line?
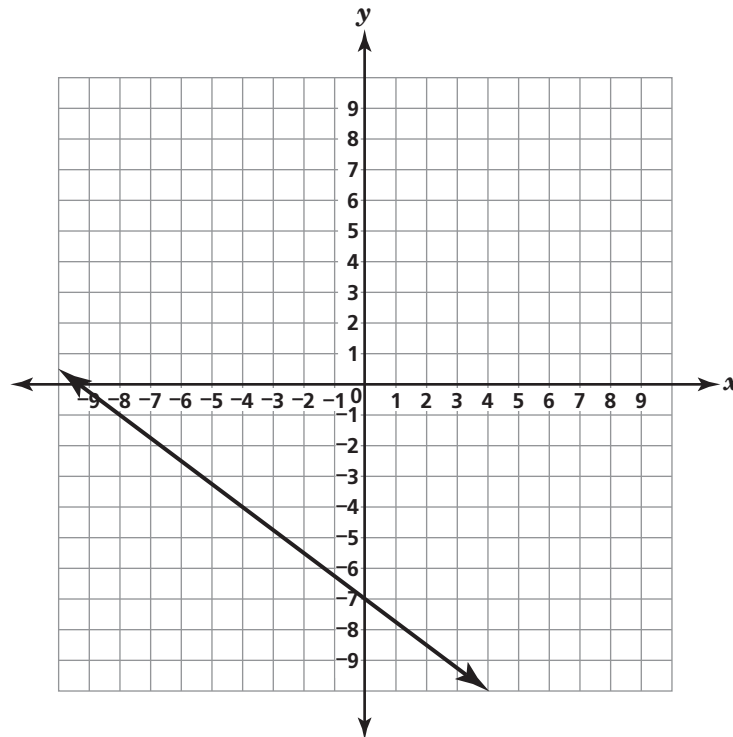
F $y = \dfrac{4}{3}x - 7$

G $y = \dfrac{3}{4}x - 7$

H $y = -\dfrac{4}{3}x - 7$

J $y = -\dfrac{3}{4}x - 7$

29 Marta is buying a car for $12,294. She agrees to make an initial payment of $1,200 and then $258 per month for n months. Which equation can Marta use to determine the number of months, n, it will take her to finish paying for the car?
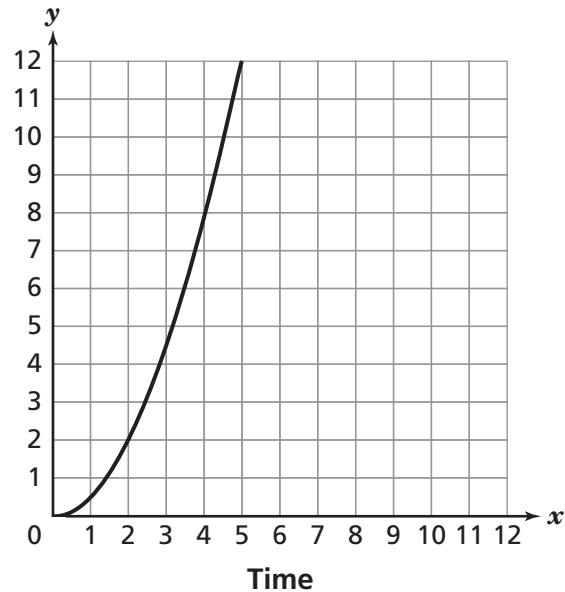
A $1,200n + 258 = 12,294$

B $1,200 + 258n = 12,294$

C $\dfrac{(1,200 + 258)}{n} = 12,294$

D $\dfrac{(1,200 - 258)}{n} = 12,294$

30 The graph represents a function related to a train's movement over time.

Time

Which function could this graph represent?

F   the speed of a train as it decreases its rate of acceleration

G   the speed of a train as it slows down when approaching a station

H   the distance of a train from a station it has departed as it accelerates

J   the distance of a train from a station it approaches at a constant speed

Go On ▶

31 Which graph best represents the solution to the system of linear inequalities?

$$x - y < 0$$
$$3y - 6x \geq 0$$
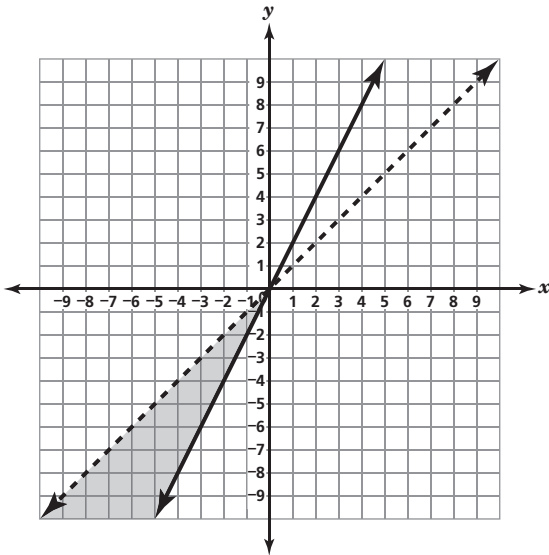
A
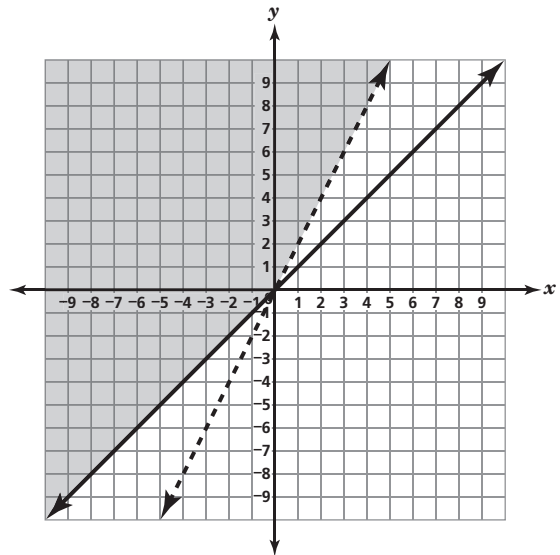
C
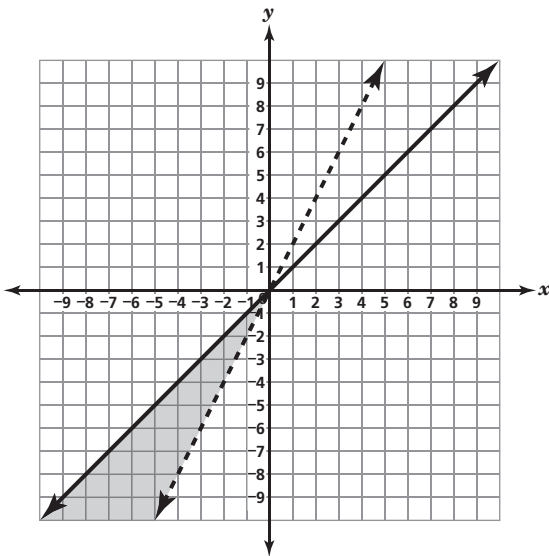
B
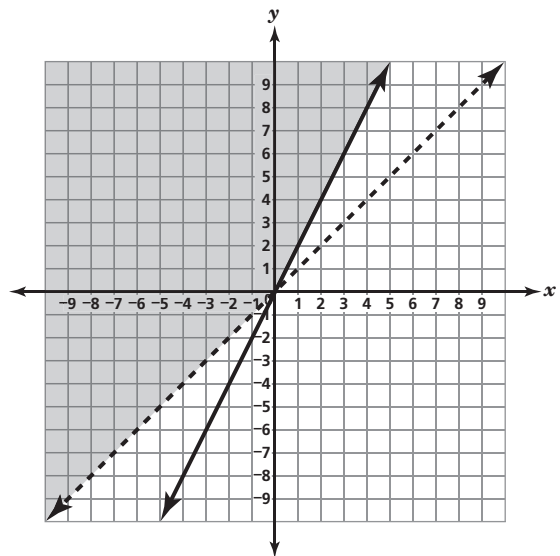
D

32 This chart shows the number of empty seats in the first six rows of a theater.

Empty Seats

Row	Number of Empty Seats
A	3
B	2
C	4
D	4
E	6
F	5

The number of empty seats in Row A decreases by 1, and the number of empty seats in Row F decreases by 3. How do these changes affect the mode of the data?

F The mode decreases by 2.

G The mode decreases by 1.

H The mode increases by 2.

J The mode increases by 1.

Go On ▶

33   Which graph <u>best</u> represents the equation $5x - 3y = 12$?
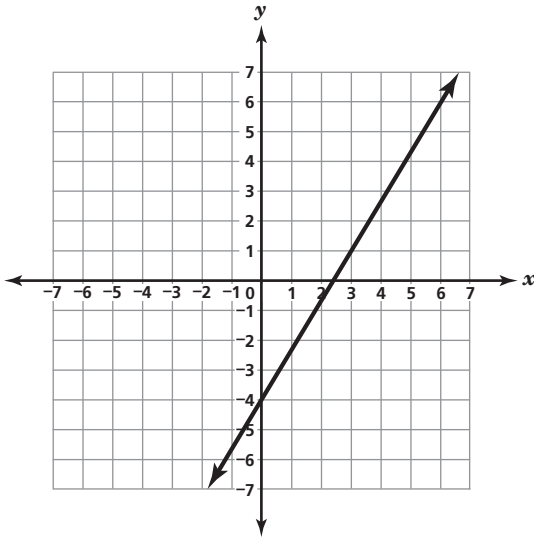
A

C
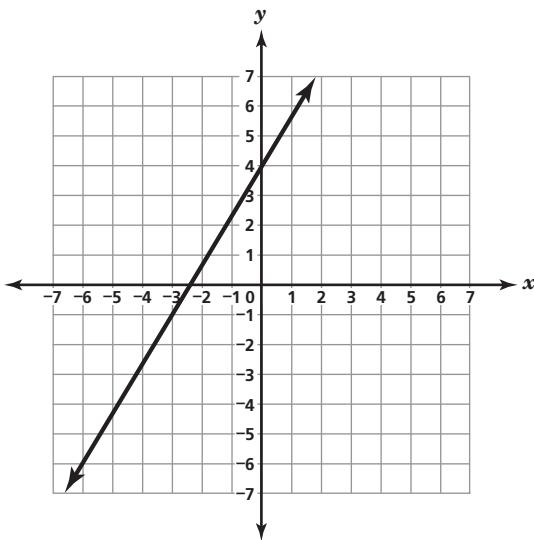
B
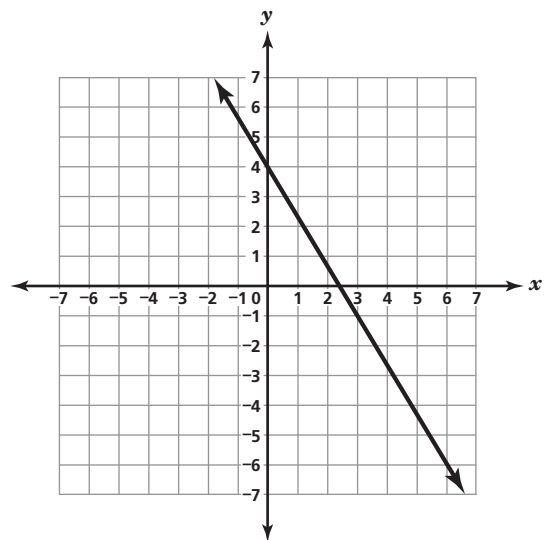
D

34 The average price of a movie ticket, over a period of several years, is shown in the graph below.

**Average Price of a
Movie Ticket**

Number of Years since 1969
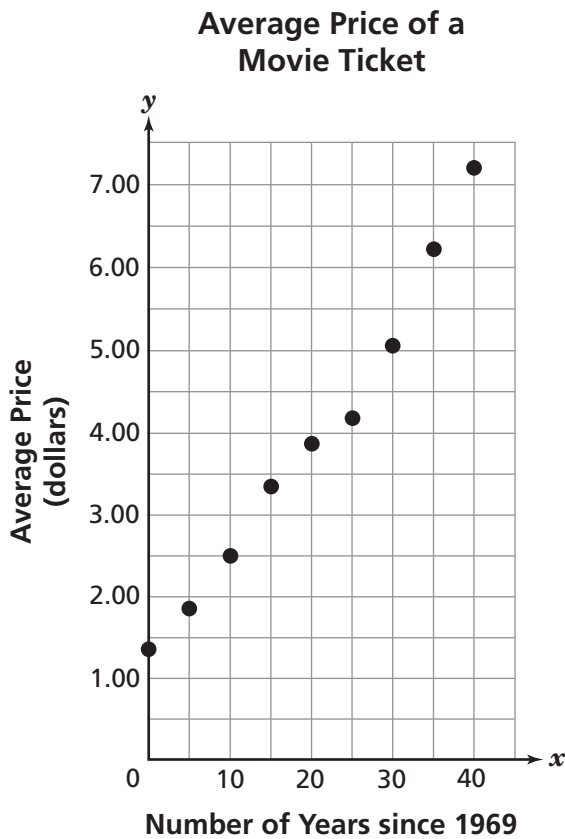
The trend shown in the graph continues. What is the <u>best</u> prediction of the average price of a movie ticket in the year 2024?

F $4.20

G $6.90

H $8.85

J $10.95

35 Which ordered pair, (x, y), represents the solution for the system of equations?

$$2.5x + 7.5y = 75$$
$$x + y = 12$$

A   (3, 9)

B   (9, 3)

C   (2, 10)

D   (10, 2)

36 The graph shows the growth in population for a city since 1940.
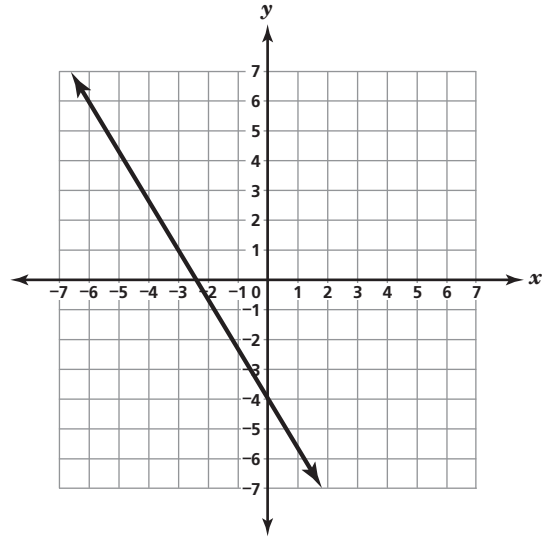
Population Growth

Years Since 1940
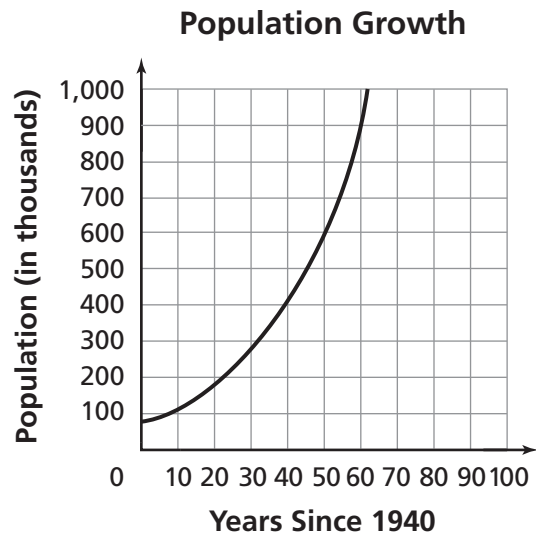
Which <u>best</u> describes the population for the year 2000?

F   less than 100,000

G   about 180,000

H   about 900,000

J   more than 1,000,000

Go On ▶

37 At the beginning of year 1, Katherine puts $100 into a savings account.

- This account pays 5% interest compounded annually.

- She puts no other money into this account, and she takes no money out of the account.

The chart shows how to calculate the amount of money in this account at the beginning of each year.

Katherine's Savings Account

Year, n	Amount in Savings Account, $A(n)$
1	100
2	100(1.05)
3	$100(1.05)^2$
4	$100(1.05)^3$

Which function represents $A(n)$, the amount in Katherine's savings account at the beginning of year n?

A $A(n) = 100$
B $A(n) = 100(1.05)^{n-1}$
C $A(n) = 100(1.05)^{n}$
D $A(n) = 100(1.05)^{n+1}$

38 Which equation best represents the line shown?
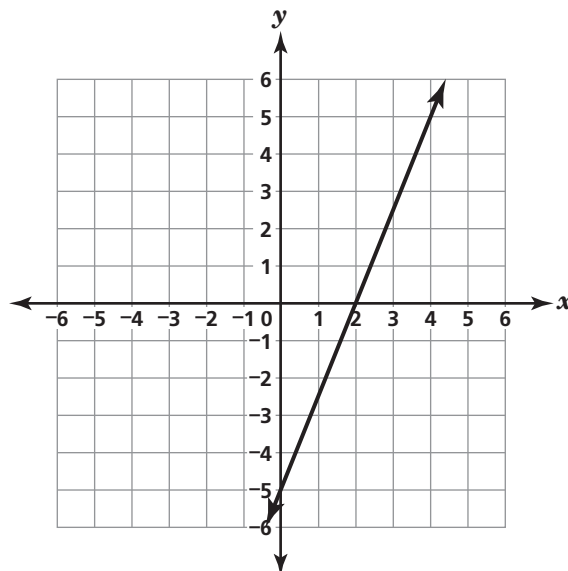
F $y = 0.4x - 5$
G $y = 0.4x + 2$
H $y = 2.5x - 5$
J $y = 2.5x + 2$

39 Which number is a solution to $3x - 19 > 5x - 7$ or $6x - 27 > 30 + 3x$?

A -19
B -5
C 5
D 19

Go On ▶

40 The table shows the 2008 United States first-class postage rate, $d(w)$, for packages of maximum weight, w.

Postage Rate for Packages in 2008

Maximum Weight in Ounces, w	Postage Rate, $d(w)$
1	$1.17
2	$1.34
3	$1.51
4	$1.68
5	$1.85
6	$2.02
7	$2.19
8	$2.36
9	$2.53
10	$2.70

The pattern in the table continues. Which value represents the postage rate of a 13-ounce package?

F $2.21

G $2.87

H $3.21

J $4.21

41 Carlos and Amanda played a game. This table shows the results.

Game Results

Result	Frequency
Carlos wins	4
Amanda wins	5
Tie	3

What is the experimental probability that there will be a tie between Carlos and Amanda?

A $\dfrac{1}{4}$

B $\dfrac{1}{3}$

C $\dfrac{5}{12}$

D $\dfrac{3}{4}$

Go On ▶

42 The total cost for renting a meeting room includes a one-time rental fee and a cost per person attending the meeting. The graph shows the relationship between n, the number of people attending the meeting, and t, the total cost.

Meeting Room Rental
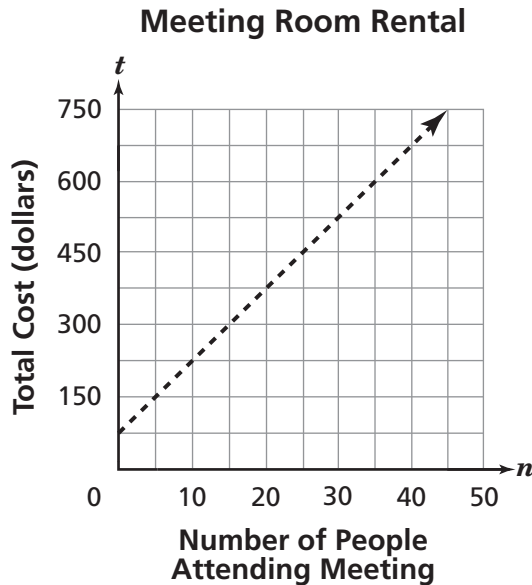
Which equation **best** represents the relationship between n and t?

F $t = -15n + 75$

G $t = -15n - 75$

H $t = 15n + 75$

J $t = 15n - 75$

43 If $x \neq -\dfrac{5}{2}$, which expression is equivalent to $\dfrac{2x^2 + 7x + 5}{\sqrt{4x^2 + 20x + 25}}$?

A $x + 1$

B $x + 7$

C $-2x^2 - 13x - 20$

D $-2x^2 - 27x - 30$

44 Which is closest to the area of the figure?
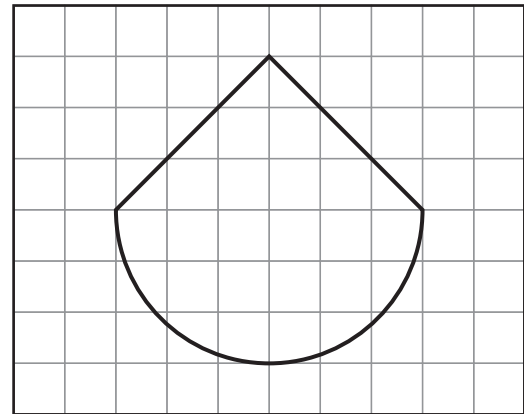
$\square$ = 1 square unit

F   18 square units

G   23 square units

H   32 square units

J   37 square units

Go On ▶

45 Which graph best shows a positive linear relationship between the variables *x* and *y*?

A

C

B

D

Go On ▶
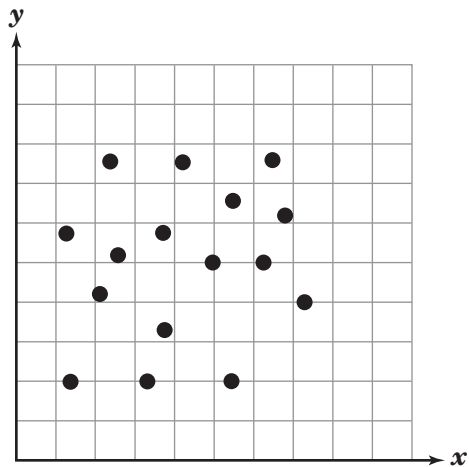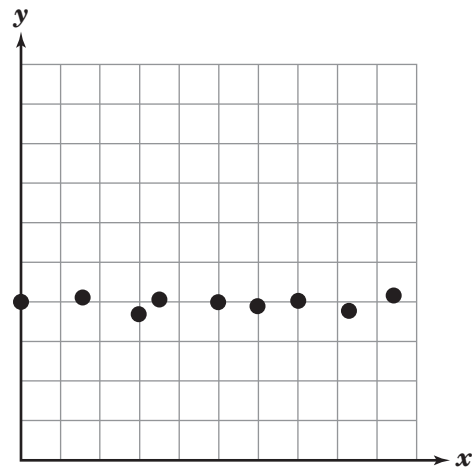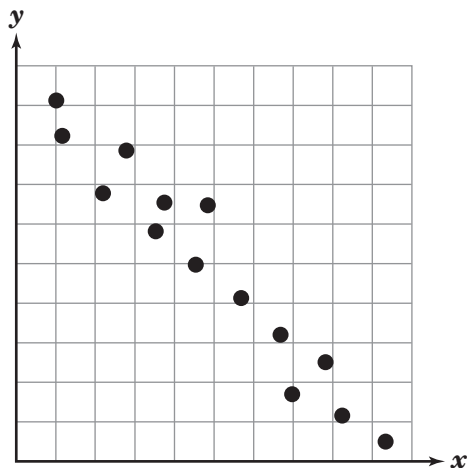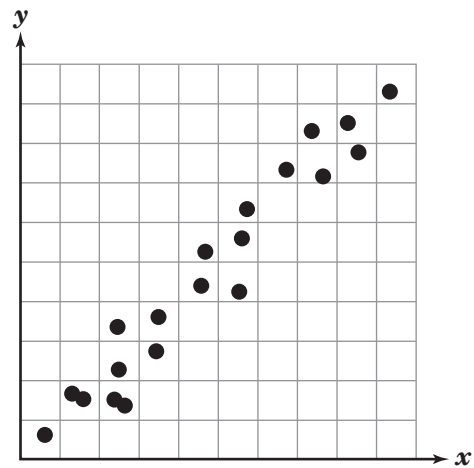
46 This set of data includes the scores that James earned on his last 6 math tests.

$$\{90, 86, 75, 95, 100, 70\}$$

If the lowest score is removed, which statement is true?

F The range will decrease by 10 points.

G The median score will increase by 2 points.

H The median score will increase by 5 points.

J The mean score will decrease by 3.2 points.

47 The distance in miles, y, a cyclist is from home after riding x hours is represented by the equation $y = 8x + 7$. What does the slope represent in this situation?

A the number of hours it takes the cyclist to ride 15 miles

B the distance the cyclist is from home when $x = 0$

C the steepness of the hill the cyclist is climbing

D the speed of the cyclist

48 Ernest paints a rectangular door as shown.
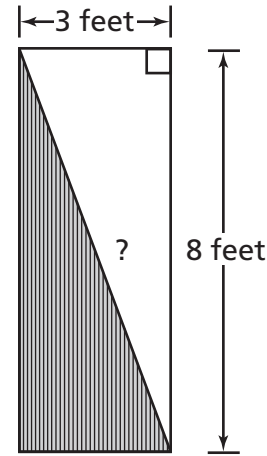
Which is closest to the length of the diagonal line segment that separates the two sections of the door?

F 5 feet

G 9 feet

H 11 feet

J 25 feet

Go On ▶

49 Simplify this rational expression:

$$\frac{3x^6 y^2 z^9}{12x^3 y^4 z^3}$$

A $\dfrac{x^2 z^3}{4y^2}$

B $\dfrac{x^3 z^6}{4y^2}$

C $\dfrac{4x^2 z^3}{y^2}$

D $\dfrac{4x^3 z^6}{y^2}$

50 Which values of x make the equation true?

$$x^2 + x - 12 = 0$$

F -6 and 2
G -4 and 3
H -3 and 4
J -2 and 6

51 What is the value of the function $f(x) = x^2 - 2x + 2$ when $x = -3$?

A -13
B -1
C 2
D 17

52 A sequence is created from the function $k(n) = 3n + 1$. In this function, n represents the position of the term in the sequence. The sequence does <u>not</u> begin at 0. Which list represents the <u>first</u> five terms of the sequence?

F   5, 6, 7, 8, 9
G   4, 7, 10, 13, 16
H   4, 7, 11, 18, 29
J   6, 9, 12, 15, 18

Go On ▶

53 Which set represents the relation shown on the graph?
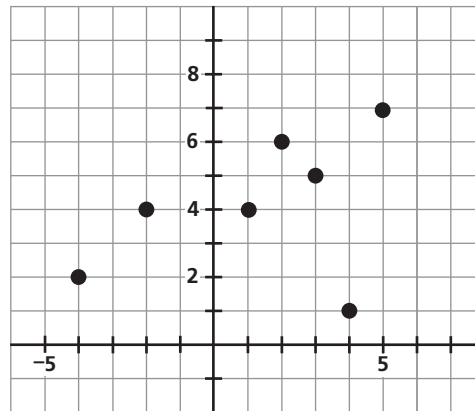
A {1, 2, 4, 5, 6, 7}

B {−4, −2, 1, 2, 3, 4, 5}

C {(−4, 2), (−2, 4), (1, 4), (2, 6), (3, 5), (4, 1), (5, 7)}

D {(2, −4), (4, −2), (4, 1), (6, 2), (5, 3), (1, 4), (7, 5)}

54 Which transformation occurs to the graph of $y = x + 1$ when the equation of the line changes to $y = -x + 1$?

   F   The line is reflected across the y-axis.

   G   The line is reflected across the x-axis.

   H   The line shifts to the left 1 unit.

   J   The line shifts down 1 unit.

55 Which compound inequality represents $|6 - 3n| \le 27$?

   A $-27 \le 6 - 3n \ge 27$

   B $-27 \le 6 - 3n \le 27$

   C $27 \ge 6 - 3n \le -27$

   D $27 \le 6 - 3n \le -27$

56 Simplify $\left(x^2 - x - 2\right)\left(\dfrac{x^2 + x - 2}{x^2 - 4}\right)$ for

all values of x for which the expression

is defined.

   F $x^2 - 1$

   G $x^2 + 1$

   H $x^2 + 2x - 1$

   J $x^2 - 2x + 1$

57 The distance from Earth to Pluto is about 4.3×10^{12} meters. The diameter of Earth is about 1.2×10^7 meters. The distance from Earth to Pluto is about how many times the diameter of Earth?

   A   0.28

   B   3.60

   C 2.8×10^4

   D 3.6×10^5

58 What is the sum of $k^3 + 2k^2 + 1$ and $3k^2 - 4$?

   F $k^3 + 5k^2 - 5$

   G $k^3 + 5k^2 - 3$

   H $4k^3 + 2k^2 - 5$

   J $4k^3 + 2k^2 - 3$

Go On ▶

59 The graph shows the value of a necklace over many years.
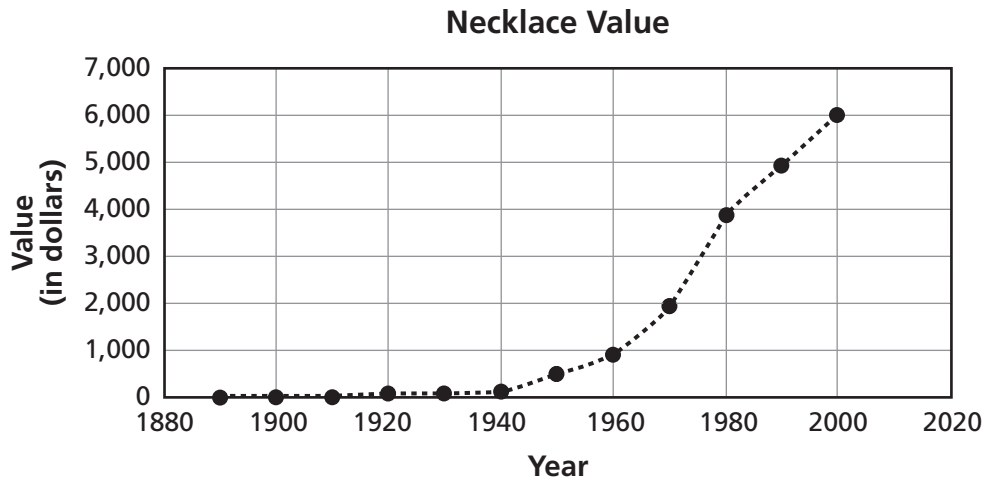
Necklace Value

What is a reasonable estimate of the value of the necklace in 1982?

A $1,970

B $3,500

C $4,000

D $5,000

Go On ▶

60 Which number correctly completes this equation?

12 square feet = ___ square inches

F   144

G   288

H   1,728

J   6,912

61 Which statement <u>best</u> describes the values of these numbers?

$$\left\{ \sqrt{\frac{25}{3}}, \sqrt{\frac{36}{5}}, \sqrt{\frac{49}{8}} \right\}$$

A   They are between 1 and 2.

B   They are between 2 and 3.

C   They are between 3 and 4.5.

D   They are between 4.5 and 8.

62 Which property can be used to show that $35 - 35(0.20)$ is equivalent to $35(1 - 0.20)$?

F   associative property

G   distributive property

H   commutative property

J   subtraction property of equality

Go On ▶

63 Which expression is equivalent to $\dfrac{3x}{\sqrt{3}}$?

    A x

    B $\dfrac{x}{3}$

    C $\dfrac{x\sqrt{3}}{3}$

    D $x\sqrt{3}$

64 What is the length of a segment with endpoints of $(3, -2)$ and $(7, 6)$?

    F $2\sqrt{21}$
    G $2\sqrt{29}$
    H $4\sqrt{3}$
    J $4\sqrt{5}$

65 Which expression is equivalent to $n^2 + 20n + 100$?

    A $(n + 10)(n + 10)$
    B $(n - 10)(n - 10)$
    C $(n + 20)(n + 5)$
    D $(n - 20)(n - 5)$

STOP

Answer Key

Item Number	Correct Answer
1	C
2	F
3	B
4	G
5	D
6	J
7	D
8	G
9	D
10	H
11	A
12	J
13	C
14	J
15	D
16	H
17	C
18	G
19	A
20	J
21	A
22	G

Item Number	Correct Answer
23	B
24	F
25	C
26	F
27	C
28	J
29	B
30	H
31	D
32	F
33	A
34	H
35	A
36	H
37	B
38	H
39	A
40	H
41	A
42	H
43	A
44	G

Item Number	Correct Answer
45	D
46	G
47	D
48	G
49	B
50	G
51	D
52	G
53	C
54	F
55	B
56	F
57	D
58	G
59	C
60	H
61	B
62	G
63	D
64	J
65	A

Reporting Categories

Below you will find that each item has been linked to its corresponding Reporting Category. These five Reporting Categories will be used to report scores from the actual test.

You can find the Reporting Categories and their Performance Indicators grouped together in the Tennessee ELSA End of Course Item Sampler for Algebra I located on the Tennessee Department of Education Web site at http://tennessee.gov/education/assessment/sec_samplers.shtml.

Item	Reporting Category
1	3 – Algebra
2	4 – Geometry and Measurement
3	2 – Number and Operations
4	1 – Mathematical Processes
5	2 – Number and Operations
6	4 – Geometry and Measurement
7	5 – Data Analysis, Statistics, and Probability
8	3 – Algebra
9	2 – Number and Operations
10	3 – Algebra
11	3 – Algebra
12	1 – Mathematical Processes
13	3 – Algebra
14	1 – Mathematical Processes
15	3 – Algebra
16	3 – Algebra
17	3 – Algebra
18	4 – Geometry and Measurement
19	1 – Mathematical Processes
20	5 – Data Analysis, Statistics, and Probability
21	5 – Data Analysis, Statistics, and Probability
22	4 – Geometry and Measurement

Item	Reporting Category
23	2 – Number and Operations
24	1 – Mathematical Processes
25	5 – Data Analysis, Statistics, and Probability
26	3 – Algebra
27	1 – Mathematical Processes
28	3 – Algebra
29	1 – Mathematical Processes
30	3 – Algebra
31	3 – Algebra
32	5 – Data Analysis, Statistics, and Probability
33	3 – Algebra
34	5 – Data Analysis, Statistics, and Probability
35	3 – Algebra
36	3 – Algebra
37	3 – Algebra
38	3 – Algebra
39	3 – Algebra
40	1 – Mathematical Processes
41	5 – Data Analysis, Statistics, and Probability
42	1 – Mathematical Processes
43	2 – Number and Operations
44	4 – Geometry and Measurement
45	5 – Data Analysis, Statistics, and Probability
46	5 – Data Analysis, Statistics, and Probability
47	1 – Mathematical Processes
48	4 – Geometry and Measurement
49	3 – Algebra
50	3 – Algebra
51	3 – Algebra
52	1 – Mathematical Processes
53	3 – Algebra

Item	Reporting Category
54	1 – Mathematical Processes
55	3 – Algebra
56	3 – Algebra
57	2 – Number and Operations
58	3 – Algebra
59	5 – Data Analysis, Statistics, and Probability
60	4 – Geometry and Measurement
61	2 – Number and Operations
62	1 – Mathematical Processes
63	2 – Number and Operations
64	4 – Geometry and Measurement
65	3 – Algebra

PRACTICE TEST

ELSA